APPENDIX J

Standard Operating Procedures

Vader-Enchanted Valley Water System

LEWIS COUNTY

DEPARTMENT OF PUBLIC WORKS

UTILITY DIVISION

VADER – ENCHANTED VALLEY WATER SYSTEM

STANDARD OPERATING PROCEDURES

JANUARY 2016

Table of Contents

ABBREVIATIONS AND ACRONYMS

CCR	Consumer Confidence Report
DOH	State Department of Health
Ecology	State Department of Ecology
EVCC	Enchanted Valley Country Club
Form	Daily Report Form
FW	Finished water
H-O-A	Hand-Off-Auto
LCC	Lewis County Code
MCC	Motor Control Center
MSDS	Material Safety Data Sheet
PLC	Programmable Logic Controller
RW	Raw water
SCADA	Supervisory Control and Data Acquisition
SOP	Standard Operating Procedures
Turbidity Form	Daily Clarifier Turbidity Form
WQMR	Water Quality Monitoring Requirements
WWTP	Wastewater treatment plant

INTRODUCTION

This Standard Operating Procedures (SOP) manual is developed to provide guidance for county staff tasked to manage and operate the Vader-Enchanted Valley water system. Lewis County began full management of the system on January 1, 2011 after receiving the system by Superior Court.

For more information about the water system leading up to the need and development of the SOP manual, please refer to the following documents.

- "City of Vader, Comprehensive Water System Plan" by Gray & Osborne, Inc., May 2008.
- "City of Vader, Comprehensive Water System Plan Amendment" by Gray & Osborne, Inc., September 2010.
- "DRAFT Water System Plan for the Vader-Enchanted Valley Water System" by Lewis County Public Works, 2014.

The procedures outlined in this manual are based on policies approved in Title 13 of the Lewis County Code (LCC); resolutions approved by the Board of County Commissioners pertaining to utility and cash handling matters, and decisions made by the Administrator of Title 13. The Administrator is the Director of Public Works.

Assistance to the Administrator is provided in a workgroup represented by operations, engineering and fiscal staff. This workgroup reviews and resolves issues in a collaborative, consensus manner. Out of this forum, the workgroup has developed specific practices and procedures. It is the intent of this manual to collect these practices and procedures to provide consistency in the management of the utility. For ease of use, this manual is divided into three sections to correspond to the three divisions of labor: Administrative, Fiscal and Operations. Personnel under the Administrative and Operations sections are under the Department of Public Works.

This manual is also intended to be a work in progress--to be updated for new equipment, new operations procedures, or for improved customer services.

As you use this manual, please keep in mind that the utility has to pay for itself. All revenue from the utility goes back into the costs of treating and delivering water to our customers. Because our customer base is so small, our customers pay for it. We hope users of this manual will keep these goals of accountability and efficiency in mind.

PERSONNEL

WHO DOES WHAT?

An outline of county staff involved in the operation the water system is in this section. This table will be updated at least once a year or when there are significant personnel changes. The Administrator of the utility is the Director of Public Works or his designee.

ALTERNATE COVERAGE

GOAL: Ensure coverage of the Utility 24 hours, 7 days a week throughout the year.

Any time off by the Operator must be approved in advance by the Utility Administrator or the authorized designee. The Utility will secure backup operators for the system. All County employees will follow the policies and procedures in the latest edition of the Lewis County Policy Manual. For extended periods of absence, the Operator may be asked to leave the work cell phone with the Road Supervisor, Utility Engineer, or designated backup operator.

Ensure agreements with backup operators are in place, and review procedures with backup operators periodically.

TABLE 1 - WHO DOES WHAT?			
	Title	**Contact ****	**Task**
ADMINISTRATIVE			
Erik Martin	Public Works Director	740-2697, 556-9093 cell	Administers utility per Title 13 LCC, approves all Fund expenditures, budget & high profile issues.
Betsy Dillin (Eff 8-1-16)	Utility Engineer	740-2759	Engineering, funding, budget, reporting, water system plan, complaints & approves invoices.
Robin Saline	Admin Assistant	740-2612	Budget, contracts, personnel.
Lanette Scapillato	Admin Support	740-1122	Maintain database and files, provide admin support as needed & assist customers on non-Fiscal matters.
FISCAL			
Carma Oaksmith	Fiscal Office Mgr	740-1383	Collections, liens, delinquent accts & Fiscal related matters.
Stacey Loflin	Customer Service	740-1371	Primary customer contact for new accts, questions & work orders.
Brenda Lane	Accts Receivable	740-2703	Billing & receipts, Meter Read Reports.
Janelle Lindsey	Accts Payable	740-2755	Pays vendors.
OPERATIONS			
Fred Terry	Area 3 Rd Supervisor	785-3304, 520-0683 cell	Plans maintenance and repair work with WTPO, backup for some work orders.
John Strom	WTPO II	295-3225, 520-2433 cell	Daily Plant operations, WQ monitoring, meter reads, work orders, system maintenance & repairs.
OTHERS			
Central Dispatch		740-1105	Lewis County Alert

** Contact information is for internal use only. Vader customers calling in from toll free 1-855-858-2843 will be initially routed to Fiscal. Fiscal will then determine and forward call to appropriate staff, if needed.

OPERATIONAL PROCEDURES

DAILY PLANT PROCEDURES

PART 1: GETTING STARTED

1. Unlock and open the gate.

2. Unlock the front door, turn on lights, open up the building and put things away.

3. Grab clipboard with the Reservoir Level form located above the sink. Take a reading of the reservoir level and record on the form. Hang up clipboard.

   Grab clipboard with the Daily Report Form (Form) from the counter, and write today's date. A blank copy of the Form is attached in Appendix A.

4. If Plant is running, turn on the taps for both raw and finished water at the sink. Let it run for about 20+ minutes. You want the tap to run long enough to get a representative sample of fresh intake water and of fresh treated water from the clear well. The Raw Water (RW) tap can only be turned on when the Plant is running. RW is turned on and off by using the red handled valve on the "gray water" line located to the right of the cupboard above the sink.

5. Take out two charts for the recorder--the blank charts are located on the file holders attached to the wall next to the desk, and write the date on the blank charts.

6. Unlock the door to the Plant Room (Plant), turn on light and enter.

7. Walk around Plant to note anything unusual. This inspection can also be done as you take readings in Parts 2 through 4.

8. Proceed to Part 2.

PART 2: PLC SCREEN READINGS

1. These steps will correspond to the items in the Form and the PLC screen.
   Record the following from the PLC screen:

   - Clearwell Level (ft)
   - Time (in military time format)
   - Coagulant % (this is under the heading "Laboratory Test" on the Form)
     Scroll down using the up/down arrow to "Coagulant Control".
     Press "Enter.
     Write the coagulant output % on the Form.
     Hit "Return" on the screen.

2. Scroll to "Flow and Cycle Totals".

3. Press "Enter".

4. Start with the screen box called "Clear Well".

   - Clearwell Gallons (100 gallons of treated water going into the clearwell)
     Start with the box called "Clear Well".
     Write the value for "Clearwell Gallons".
   - Influent Gallons (100 gallons of raw water into the WTP)
     Write the value for "Influent Gallons".
   - Total Flushes (tells how many raw water flushes done for each unit, we record the total flushes from each unit)
     Using the same screen, add the # of flushes together and write the total.
   - Total Backwashes (tells how many treated water backwashes done for each unit, we record the total backwashes from each unit)
     Using the same screen, add the # of backwashes and write the total.

5. Press the "Reset box" for the clearwell, influent and flush/backwash to reset to zero.

6. On the same screen, find the box "Run Time Hours".

   - Run Time (Hours) from PC screen.
     Write the number with a decimal point.
   - Treated Effluent: this parameter is not on the screen, and the box on the Form is left blank.

7. Scroll up to "Plant Status".

8. Press "Enter". You have completed taking the readings from the PLC screen.

9. Proceed to Part 3.

PART 3: OTHER PLANT READINGS

1. Look for the two chart recorders located to the left of the PLC.

2. Open the door of Chart Recorder #1.

   (Chart Recorder #1 records raw water turbidity (green ink), finished water turbidity for Filter 1 (blue ink), finished water turbidity for Filter 2 (red ink), and the combined turbidities for Filters 1 and 2 (black ink). Each grid for Chart Recorder #1 represents 0.01 unit.)

3. Lift the tab in the middle of the chart.

4. Note the time position on the chart as indicated by the arrow.

5. Remove chart and replace with a blank one in the correct time position.

6. Push tab down to lock chart.

7. Repeat steps for Chart Recorder #2.

8. Watch the display on Chart Recorder #2. When channel #1 is displayed, write that value for "2nd CL2 Reading" on the Form.

   (The channel #1 display is the chlorine residual in the clearwell read at instantaneous moments. Channel #2 is the pH of the clearwell read instantaneously. Channel #3 is the influent (raw water) in gpm. Channel #4 is the effluent in gpm read at the meter going to town. We don't record effluent in gpm which is read at instantaneous moments, but record the cumulative volume of effluent from the blue box with red numbers—see following steps. Each grid for Chart Recorder #2 represents 0.01 unit.)

9. Place the old charts in the file box marked "Old Charts". The file box is located directly under the file holder for the new charts.

10. Look for the blue box with red numbers, located to the upper left of the PLC.

    (The meter in this box reads volume of treated water going into the distribution system as read from the meter located in the outside vault. The values are in units of 1000 gallons.)

11. Write down the number for Effluent to Town.

12. No reporting is done for the 5 line items under the heading *Pump Settings* on the Form.

13. Proceed to Part 4.

PART 4: CHEMICALS USED

1. Walk over to the chlorine barrel in the SW corner (to the right of the PLC screen).

2. Check and record the level of the chlorine tank. One wants to keep the chlorine tank level about full because chlorine dissipates readily and keeping the tank full retards rapid dissipation. Refer to the section, MIXING CHEMICALS.

   - Chlorine (gallons).
     Stop and record the level of the chlorine barrel in the Form.

3. Look to the left for a green meter labeled "Backwash Flow Meter".

   - Backwash Present (100 gallons).
     Write down the number on the Form.

4. Walk to the back of the Plant and around the corner to the left.

5. Look for the green meter with a tag labeled "Influent Flow Meter" on the wall.

   - Raw Influent Present (100 gallons).
     Read on meter as "Influent Flow Meter FIT001".
     Write this number down for "Raw Influent Present" on the Form.

APPENDICES

APPENDIX A – Daily Monitoring Forms and Instructions

Daily Report Form
Daily Turbidity Form
Water Usage/Sales Form
Daily Distribution Cl2 Readings Form

Laminated Card Instructions & Parameters (4 photo sheets)

Sample of Completed Chain of Custody Form

Turbidity Chart (replaced with electronic reading turbidimeter)

APPENDIX A – Daily Monitoring Forms

DAILY REPORT FORM - VADER WATER SYSTEM PLANT OPERATIONS FOR THE WEEK OF:							
	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Clearwell Level (ft)							
Time							
Clearwell (100 gallons)							
Influent (100 gallons)							
Total Flushes							
Total Backwashes							
PUMP SETTINGS:							
Chlorine	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Soda Ash	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alum	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Polymer #1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Polymer #2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
READINGS:							
Raw Influent Present (100 gallons)							
Treated Effluent	Clearwell	Clearwell	Clearwell	Clearwell	Clearwell	Clearwell	Clearwell
Backwash Present							
Effluent to Town (1000 gallons)							
Run Time (hrs)							
CHEMICALS USED:							
Chlorine (gallons)							
Alum (gallons)							
Polymer (gallons)							
Soda Ash (gallons)							
LABORATORY TEST:							
Raw Turbidity							
Raw Temperature (°C)							
Finished Temperature (°C)							
Raw pH							
Finished pH							
Clearwell Chlorine (mg/L)							
2nd CL2							
Coagulant %							

Daily Clarifier Turbidity Form

MONITORING DAILY TURBIDITY AT PLANT CLARIFIER UNITS
FOR THE MONTH OF:

	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9
DATE	READINGS OF FINISHED WATER FROM CLARIFIERS:			LABORATORY RDG:		CLEARWELL ELEV.	CHLORINE RESIDUAL	STREAMING CURRENT METER RDG:
	UNIT #1 (NTU)	UNIT #2 (NTU)	Combined (NTU)	Raw Water (NTU)	Settled from clarifiers (NTU)	(ft)	(mg/L)	(+)
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
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APPENDIX B - Manual Plant Start-Up Procedure

1. Turn off power to the Plant PLC by opening fuses F-3, F-4, F-5 and F-6 in the Plant control panel.

2. Set up the chemical feed pumps to operate manually. If the Plant is to make approximately 150 gpm of water, set the chemical feed pump speed settings to the setting listed below in Table 1. Use the calibration columns for each pump to verify that the pump output matches the output listed below. If the output differs significantly, adjust the pump speed until the output is obtained.

TABLE 1. CHEMICAL FEED PUMP SETTINGS

PUMP TYPE	PUMP SPEED SETTING	PUMP OUTPUT (mL/min)
Alum	60	55
Polymer	25	11
Soda Ash	50	5
Sodium Hypochlorite	50	22

3. Open the raw water valve for each filter by pulling out the handwheel and the turning the wheel to the left until the valve is fully open. Leave the handwheel out when finished.

4. Turn on a raw water pump by turning the H-O-A switch for the raw water pump on the telemetry panel to the Hand position. If this does not bring water to the treatment plant, go down to the raw water pump station and turn on a raw water pump.

5. When water is heard entering the filters, go to the alum and polymer metering pumps and turn the H-O-A switch for one metering pump for each chemical to the Hand position. On the front of the metering pumps to be operated, flip the Internal-Off-External switch to the Internal position.

6. Open the filter-to-waste valves for each filter using the handwheel operator.

7. Check to see that the filtered water valves and the waste valves for each filter are in the closed position. If they are not closed, close them using the handwheel operator.

8. Go to the soda ash and sodium hypochlorite feed pumps, and turn the H-O-A switch for one metering pump for each chemical to the Hand position. On the front of the metering pumps to be operated, flip the Internal-Off-External switch to the Internal position.

9. Go to the MCC panel and turn the H-O-A for wach effluent pump to the Hand position. The effluent pumps should begin pumping water to waste.

10. Once the filtered water turbidimeters indicate a filtered water turbidity of less than 0.25 for each filter, open the filtered water valves on each filter using the handwheels and close the filter-to-waste using the handwheels.

11. Monitor the turbidity and chlorine residual to ensure proper treatment is being provided.

12. Monitor the time the filters run, flush the adsorption clarifier, and backwash the filters at regular intervals. (Approximately every 6 hours for the clarifier and every 18 hours for the filter.)

APPENDIX C - Manual Adsorption Clarifier Flush Procedure

1. Turn off power to the Plant PLC by going to Panel N and flipping circuit breaker No. 14 to the off position.

2. Close the raw water valve for the filter to be flushed by opening by pulling out he handwheel and turning the wheel to the right until the valve is fully closed. Leave the handwheel out when finished.

3. Go to the MCc panel and turn the H-O-A for the effluent pump for the filter to be flushed to the Off position.

4. Close the filtered water valve for the filter to be flushed using the handwheel operator.

5. Open the waste vlave for the filter to be flushed using the handwheel operator.

6. Open the air supply valve to the adsorption clarifier to be flushed using H-O-A on the side of panel.

7. Go to the MCC panel and turn the H-O-A for the air blower to the Hand position.

8. Air will be bubbling into the adsorption clarifier, expanding the clarifier media. Allow the air to bubble for 1-2 minutes.

9. Open the raw water valve using the handwheel operator. Allow the air and water flush to continue for 3-4 minutes.

10. Close the raw water control valve using the handwheel operator.

11. Allow the blower to continue running for one more minute, then turn off the blower at the MCC by putting the H-O-A switch in the Off position.

12. Close the air valve.

13. Allow the clarifier to set for one minute.

14. Close the waste valve using the handwheel operator.

15. Open the raw water valve using the handwheel operator.

16. Open the filtered water valve for the filter to be flushed using the handwheel operator.

17. Reset parameters in PLC.

APPENDIX D - Manual Filter Backwash Procedure

1. Turn off power to the Plant PLC by going to Panel N and flipping circuit breaker No. 14 to the Off position.

2. Close the raw water valve for the filter to be backwashed by pulling out the handwheel and turning the wheel to the right until the valve is fully closed. Leave the handwheel out when finished.

3. Open the filter to waste valve by pulling out the handwheel and turning the wheel to the left until the valve is fully opened.

4. Go to the MCC panel and turn the H-O-A (Hand-Off-Auto) switch for the effluent pump for the filter to be backwashed to the Hand position. Lower the water level in the filter down to approximately 6 inches above the filter media. Turn off the effluent pump.

5. Close the filter to waste using the handwheel operator.

6. Open the waste valve for the filter to be backwashed using the handwheel operator.

7. Open the air supply valve to the filter to be backwashed using the switch on the side of the filter.

8. Go the MCC panel and start the air blower by turning the H-O-A switch for the air blower to the Hand position.

9. Open the backwash valve to the filter using the handwheel.

10. After 1-2 minutes, go to the MCC panel and start the backwash panel by turning the H-O-A switch for the backwash pump to the Hand position.

11. Adjust the backwash flow control valve so that it provides 40 gpm.

12. After 2-3 minutes, turn off the blower at the MCC and close the air valve.

13. Open the backwash flow control valve until it provides 300 gpm. Continue operating the backwash pump for 3-5 minutes until the water above the filter appears clear.

14. Turn off the backwash pump at the MCC.

15. Close the waste valve using the handwheel operator.

16. Open the filter-to-waste vavle using the handwheel operator.

17. Open the raw water valve using the handwheel operator.

18. Turn on the effluent pump using the H-O-A switch at the MCC.

19. Monitor the filtered water turbidity level. Once the turbidity drops below 0.25 NTU for a period of one minute, open the filtered water valve and close the filter-to-waste valve using the handwheel operator.

Appendix E - Manual Adsorption Clarifier De-plugging Procedure

This procedure is to be used when the adsorption clarifiers are still plugged after flushing of the adsorption clarifiers and backwashing of the filters. This incident is infrequent but it has happened with heavy turbid RW. This procedure is outlined according to technical assistance from Evergreen Rural Water.

1. Follow Steps #1 through #4 for "Manual Adsorption Clarifier Flush Procedure".
2. Open the waste valve for the filter to be flushed using the handwheel operator.
3. Draw down the water level in the clarifier to about 6 inches. Close the waste valve using the handwheel operator.
4. Place about 5 gallons of sodium hypochlorite in the clarifier chamber.
5. Let the liquid in the clarifier chamber sit for about 5 minutes.
6. Open the air supply valve to the adsorption clarifier to be flushed using the H-O-A switch on the side of the panel.
7. Air will be bubbling into the adsorption clarifier, expanding the clarifier media. Allow the air to bubble for 1-2 minutes.
8. Turn off the blower at the MCC panel by putting the H-O-A switch to the Off position.
9. Close the air valve.
10. Allow the clarifier to sit for 1-2 minutes.
11. Repeat Steps #6 through #10 until deposits on the clarifier are removed or look to be about the same state of removal under normal absorption clarifier flush procedures.
12. Follow Steps #9 through #17 for "Manual Adsorption Clarifier Flush Procedure".

APPENDIX F – Monthly Reporting and Monitoring Forms

APPENDIX G – Annual Reporting and Monitoring Forms

APPENDIX H – Maintenance Information

RECOMMENDED MAINTENANCE SCHEDULE FOR THE WATER PLANT

FREQUENCY	COMPONENT	INSPECTION AND MAINTENANCE
Daily	Chemical Feed Pumps	Check for operation, feed lines are not frayed and kinked.
Daily	Chemical Feed Tanks	Visually check solution levels, and make solutions if necessary.
Daily	Filters	Check floc characteristics above filter.
Daily	Turbidimeter	Visually check the flow through the turbidimeters. The desired flow rate should be in the range of 250-750 ml/min.
Daily	Turbidimeter	Check online meter reading against portable meter reading.
Daily	Valves	Visually check valves for operation and leaks.
Daily	Electric Panel/Motor Control Center (MCC)	Visually check unit for proper operation.
Daily	All Pump Mechanical Seals	Check seals for leakage.
Daily	Motors	Check motor bearing temperature. If bearings are running hot, consult motor manufacturer's instructions.
Daily	Online Chlorine Analyzer	Check indicator reagents.
Weekly	Motors	Clean oil, dust, dirt, water and chemicals from the exterior of motor. Make sure motor air intake and outlets (fan cooled motor) are unobstructed.
Weekly	pH Meter	Calibrate.
Weekly	Adsorption Media	Check condition, wash floc accumulation if necessary.
Weekly	Online Chlorine Analyzer	Check online meter reading against reliable portable water reading. Calibrate online meter if necessary.
Monthly	Portable Turbidimeter	Check standardization with Glex secondary standard.
Monthly	Alarms and Callout System	Test.
Monthly	Online Chlorine Analyzer	Clean colorimeter measuring cell with 19.2 N sulfuric acid.
Quarterly	Instrumentation	Calibrate.
Quarterly	Plant Controls	Check operations through one cycle. Test controller inputs (level switches and alarms), and check for proper Plant response.
Quarterly	Heater and Thermostat	Inspect and clean units.
Every 4 Months	Turbidimeter	Calibrate unit. Drain and clean turbidimeter body, tubing and inlet.
Semi-Annually	Chemical Feed Tanks	Drain and clean.
Semi-Annually	Floc Tanks	Drain and clean.
Semi-Annually	Online Chlorine Analyzer	Replace pump tubing.

FREQUENCY	COMPONENT	INSPECTION AND MAINTENANCE
Annually	Chemical Feed Pumps	Calibrate.
Annually	Vertical Turbine Pump	Change oil and grease bearings.
Annually	Flow Meter	Clean and inspect propeller and bearing.
Annually	Filter Media	Check for "mudballs" or other solid accumulation.
Annually	Filter Media	Check filter for loss of media.
Annually	Chemical Pumps	Clean and service pumps.
Annually	Static Mixer	Clean mixer.
Annually	Blowers	Lubricate.
4-6 Years	Clearwell and Reservoir	Conduct interior and exterior inspection for solids and structural integrity. Clean and correct structural problems if necessary.

APPENDIX J - Repair Information

AWWA Small Systems Pipe Repair Checklist, July 2008

6. Check and record the levels of the three chemical tanks along the east wall of the plant on the daily log form. Use the depth gage to measure the level and write the number in the proper lines in the Form. Wipe the depth gage after each use.

7. These tanks are for alum, soda ash and polymer; and the levels should be about full in anticipation of use.

   (The determination of the usage rate of these chemicals in the tanks is an art and dependent upon season, weather forecasts, and Tacoma Dam activities which could affect turbidity at the intake.)

8. If chemical tanks need to be mixed, refer to the section, MIXING CHEMICALS.

9. Exit the Plant.

10. Place the old charts in the file box marked "Old Charts". The file box is located directly under the file holder for the new charts.

11. Proceed to Part 5.

PART 5: LABORATORY PROCEDURES

1. These steps will correspond to the items under the Form heading, "LABORATORY TEST".

2. If taps were not turned on in Part 1, then refer to Step 4 in Part 1 to turn on the taps for both raw and finished water at the sink.

3. Take the 100 ml beaker with the "R" on the side and fill it with the raw water.

4. Turn off the raw water tap.

5. Pour some of the raw sample into the sample cell without the 10 ml mark on it. Fill to the top but do not let it overflow.

6. Turn on the turbidimeter and wait for it to reset to zero. Lift the lid, place sample cell in to the meter with the diamond pointing outward, close the lid, and press "Read".

7. The display will flash while the sample is analyzed. When the turbidimeter is done reading, write the value down for "Raw Turbidity" on the Form.

8. Turn the meter off and remove the sample.

9. Turn on the pH meter, remove the probe from the storage solution, place the beaker with the raw sample on the counter under the probe, and insert probe into the "R" beaker.

10. The display will begin to count up or down depending on the pH of the sample. When the display settles out, read the pH meter, and write the value down for "Raw pH" on the Form.

11. The pH meter will also give you a value for temperature. Write the value down for "Raw Temperature" on the Form. Put the probe into the storage solution.

12. Empty the raw water sample containers, rinse with finished water, and place on the drying rack/towel.

13. The raw water tests are completed. Proceed to the tests for finished water.

14. Take the 100 ml beaker with the "F" on the side and fill it with the finished water.

15. Turn off the finished water tap.

16. Pour some of the finished water into one of the sample cells that has a line marked to the 10 ml mark.

17. Cap the cell, and wipe to remove any moisture and fingerprints.

18. Lift the cover from the chlorine meter, place the sample cell into the meter, put cover on, and press "zero" to start.

19. When the meter reads zero, remove the cover, take out the cell, remove cap from the cell, place DPD dispenser over the top, push the button on the side of the dispenser to emit a pre-measured dose of DPD reagent, place cap back on the cell, and shake the cell to mix the water-and-DPD sample.

20. Wipe the cell to remove any moisture and fingerprints, put cell back in the meter, place cover on, and press "read".

21. Take the reading for residual chlorine and write down the value for "Clear well Chlorine".

22. Discard sample from cell, rinse chlorine cells with finished water, and place on the drying rack/towel.

23. Test the finish water for pH using the F beaker and follow Steps #9 to #10 for the pH meter using the F beaker.

24. Write down the values for "Finished pH" and "Finished Temperature" on the Form.

25. Empty the finished water sample containers, rinse with finished water, and place on the drying rack/towel.

26. The Laboratory Procedure is complete. Proceed to Part 6.

PART 6: MONITORING CLARIFIER PERFORMANCE

1. This test procedure is done daily to gage the performance of the Adsorption Clarifiers by monitoring the settled NTU of the water from the adsorption clarifiers before the water undergoes the mixed media filter.

2. Use the clipboard with the Daily Clarifier Turbidity Form (Turbidity Form). The clipboard is stored above the sink. A copy is provided in Appendix B.

3. Take the sample cell used to monitor the turbidity of raw water in Part 5 along with the small beaker and clipboard, and walk into the filter platform area.

4. Fill the sample cell with water to the top but do not let it overflow. It does not matter which filter unit you take it from, but be random about it throughout the week.

5. Take the sample over the turbidimeter.

6. Turn on the turbidimeter and wait for it to reset to zero.

7. Lift the lid, place sample cell in the meter with the diamond pointing outward, close the lid, and press "Read".

8. When the turbidimeter is done reading, write the value down for "Settled NTU" in column 6 on the Turbidity Form.

9. Transfer some of the data from the Form onto the Turbidity Form:

   Raw Turbidity from the Form = Column 5 for Raw Water on Turbidity Form.
   Clearwell Level from the Form = Column 7 for Clearwell Elevation on Turbidity Form.
   Clearwell Chlorine from the Form = Column 8 for Chlorine Residual on Turbidity Form.

10. Walk over to the meters recording the turbidity from each clarifier unit. These meters are located on the north wall of the Plant. Record the readings in Columns 2-4.

    (Plant NTU is the same as "combined NTU" listed as Column 4 in the Turbidity Form.)
    (The goals to be achieved in Part 6 are:
    Settled Water Turbidity ≤ 2 NTU @95% of the time when annual average source turbidity is > 10 NTU.
    Settled Water Turbidity ≤ 1 NTU @95% of the time when annual average source turbidity is ≤ 10 NTU.)

11. Read and record the value for Column 9, Streaming Current Meter. This meter is located on the east side of the Plant, opposite the chemical tanks.

12. The Turbidity Form is complete. Proceed to Part 7.

PART 7: WINDING DOWN

1. Walk back to the turbidimeters in the plant. Look at values to see if it is within reasonable range.

2. Scroll down to Coagulant Control. If this is okay, in reasonable correlation range of past experienced raw NTU and dosage, then you can start other activities or close up. Continue scrolling and checking other parameters. If things look good, you can start other activities or close up.

3. Lock Plant door when you leave the Plant to work on other tasks. Call in to Area 3 about your planned tasks off the Plant grounds as a safety procedure. If Area 3 cannot be reached, then contact Engineering by email or phone about your planned tasks.

4. When closing up for the day, adjust the thermostat for the evening.

5. Take a reading of the reservoir level, record it on the Reservoir Level form, and hang up the clipboard on the cupboard above the sink.

6. Turn off all unnecessary appliances (i.e., coffee pot, computer, heaters, fans, equipment).
7. Ensure security camera is on.
8. Turn off interior lights and lock front door.

MIXING CHEMICALS

Chemical storage areas shall be kept as clean as possible to prevent chemical dust from creating maintenance problems.

- Alum in solution with water forms acid conditions. Alum dust combined with a little moisture can become quite corrosive to equipment, metals and finishes.
- Polymer solutions or polymer powders mixed with a little moisture forms a very slippery film.

Dust from chemicals and spilt chemicals shall be cleaned up at once; not allowed to build up on floors, walls, pumps, valves, instruments, and doors; and the floor cleaned and dried at once to prevent slipping.

The chemicals used in water treatment require some precautions for storage and handling. Know and keep the material safety data sheet (MSDS) and handling information accessible. MSDS are kept in a binder labeled "MSDS" on the bookshelf.

When mixing alum, one 50-gallon batch of alum or/and one 50-gallon batch of polymer can be mixed while the Plant is running. You must shut down the Plant to mix a batch of soda ash or more than one batch of alum.

SODA ASH

1. Mix one bag (50 lbs) per 100 gallons water.
2. Turn on mixer.
3. Turn on water.
4. Pour soda ash into (be sure there are no lumps) the tank.
5. Stir with designated stick to ensure no sticking on the bottom of the tank.
6. Record the number of batches added for the day by circling the number of batches in daily log form.

   (The amount used for the current day is made taking the difference of the current day's and next day's readings in the daily log form as part of the daily procedure in "Part 4: CHEMICALS USED".)

ALUM (Hydrated Potassium Aluminum Sulfate)

1. Mix one bag (50 lbs) per 50 gallons water.
2. Turn on mixer.
3. Turn on water.
4. Pour alum into (be sure there are no lumps) the tank.

5. Stir with designated stick to ensure no sticking on the bottom of the tank.
6. Record the number of batches added for the day by circling the number of batches in daily log form.

POLYMER

1. Get the graduated cylinder that is marked with a fill level from the dry polymer storage barrel. Fill polymer to the marked level which will be mixed with 50 gallons of water.
2. Turn on mixer.
3. Turn on water.
4. Slowly pour the dry polymer into the funnel that will mix it with the water.
5. Stir with designated stick to ensure no sticking on the bottom of the tank.
6. Record the number of batches added for the day by circling the number of batches in daily log form.
7. Convert usage of polymer to pounds by using a factor of 0.2 lb of polymer to one gallon of polymer solution. Each batch is 50 gallons of polymer solution.

SODIUM HYPOCHLORITE

1. When mixing sodium hydrochlorite (chlorine) the Plant doesn't need to be offline, unless the chlorine tank is really low. Generally, you want to maintain the chlorine tank to be almost full to retard dissipation of chlorine.
2. Note current level of tank to determine needed volume. Markings on the chlorine tank are in 5-gallons and approximate 1-gallon.
3. The dilution ration is one gallon chlorine to 7 gallons water.
4. Remove blue plug.
5. Insert hose with the valve.
6. Open the valve on the hose.
7. Crank the chlorine pump to add 1 gallon of chlorine.
8. Rotate cover of tank to align the hold under the water spigot.
9. Slowly fill tank with water to correspond with the added chlorine.
10. Chlorine will build up crystals at the screened intake of the chlorine line. When you see a lot of air bubbles coming from the intake line, check the screened intake.
11. Shut water off.
12. Cap chlorine tank with the blue cap.

13. Record the number of batches added for the day by circling the number of batches in daily log form.

14. Convert usage of chlorine to pounds by using a factor of 0.13 lb of chlorine to one gallon of 12.5% chlorine solution.

OPERATOR DUTIES AT THE INTAKE FACILITY

Operations staff shall once a week or more often if needed, inspect the intake pump, booster pumps and pump station building. Follow the guidance in the Maintenance section of this document.

SHUTTING DOWN THE PLANT

There may be times when the Plant needs to be shut down such as:

- High turbidity levels of the raw water.
- Damage to the intake facilities.

In that case, follow the instructions below to shut down the Plant.

1. Go to the PLC unit.
2. Look for the three boxes "Plant", "Unit 1" and "Unit 2" at the top of the PLC screen.
3. Press the STOP box under "Plant" heading.
4. Press the the OFF boxes under the "Unit 1" and "Unit 2" headings.

Do not shut the Plant down by shutting off the power to the Plant. If the main circuit breaker for the Plant is pulled, the settings for the Plant will reset at default settings, and all recorded data is erased.

STARTING UP THE PLANT

To start up the Plant, press the AUTO boxes located under the "Plant", "Unit 1" and "Unit 2" headings.

MANUAL PLANT START-UP

Follow the procedures outlined in Appendix C, Manual Plant Start-Up Procedure.

MANUAL ADSORPTION CLARIFIER FLUSH PROCEDURE

Follow the procedures outlined in Appendix D, Manual Adsorption Clarifier Flush Procedure.

MANUAL FILTER BACKWASH PROCEDURE

Follow the procedures outlined in Appendix E, Manual Filter Backwash Procedure.

MANUAL ADSORPTION CLARIFIER DE-PLUGGING PROCEDURE

This procedure is to be used when the adsorption clarifiers are still plugged after flushing of the adsorption clarifiers and backwashing of the filters. This incident is infrequent but it has happened with heavy turbid RW. Follow the procedures outlined in Appendix F, Manual Adsorption Clarifier De-plugging Procedure.

TURBIDIMETER

A Hach 1720C turbidimeter continuously measures raw water turbidity at the Intake Structure.

There are two Hach 1720E low range turbidimeters in the plant. These two five-year old meters were installed in August 2014 and monitor finished water turbidity for filter #1 and #2. Both units are located on the side of plant #1 which directly faces the door to the plant room. The meter measuring the combined finished water is a GLI Accu4 low range turbidimeter located on the wall at eh effluent end of plant #1.

Manufacturer literature about instrument operation and analyzer calibration are in Appendix H.

REPORTING AND MONITORING

MONTHLY REPORTING AND MONITORING

A summary of the information from the daily log form and the recorder charts needs to be transferred into the DOH Monthly Report Forms (#331-023, 331-048, 331-172). This form must be sent in to DOH by the 15th day of the following month and to: DOH, SW Regional Operations, POB 47823, Olympia, WA 98504-7823. Blank copies of the forms are housed in the Operator's computer. Copies of these report forms are in Appendix F.

ID parameters are:

- PWS ID is 90900E
- Source ID is SO1
- PWS Name is "Vader – Enchanted Valley".
- Source Name is "Cowlitz River".

Reporting for the WTP backwash lagoon discharge must be submitted to Ecology by the 15th day of the following month using the form "WTP Backwash Monitoring Report Group 1 Facilities". The permit no. is WAG 64-1004.

Once the forms are completed, the Operator will sign the packet, scan and forward an electronic copy to Engineering, and give the original packets to Engineering.

The WTP backwash reporting form has to be signed by the Utility Administrator or a designee as authorized in a form to Ecology. If in doubt, get the Administrator's signature on the backwash form. Engineering will review, approve and send the originals to DOH and Ecology.

BACKWASH LAGOON DISCHARGE

Monthly sampling for settleable solids, chlorine, pH and turbidity of the backwash lagoon discharge need to be done every month. The samples are taken at the last catch basin on the southwest corner of the lagoons at the 8" effluent line (inlet into the catch basin).

1. Get the blue water pitcher that is stored in the cupboard above the sink.

2. Go the sample site—last catch basin on the southwest corner of the lagoons at the 8" effluent line.

3. Lift the grate and lay aside.

4. Dip out one pitcher full of water. This can only be done when there is flow in the effluent line (inlet into the catch basin). Be careful not to stir up any sediment.

5. Replace grate and shut gate. Return to the WTP lab.

6. Fill a sample cell for turbidity and one for chlorine lab tests.

7. Fill the small beaker labeled "R" with water from the pitcher.

8. Pour the remaining water in the pitcher into an Imhoff cone and fill to the one liter mark at the top. Let this water sit for one hour.

9. Turn on the pH meter and place the probe in the beaker.

10. Record the pH reading on the "Back Wash Pond Test" sheet on the clipboard hung on the cupboard.

11. The permitted pH must range from 6 to 9. If a low reading (up to 6.2) is obtained, consider application of sodium bicarbonate into lagoon. As a start, mix 2 cups and take a reading later in the day. Note on form.

12. Place the chlorine sample in the chlorine meter and follow the steps to conduct a chlorine reading as outlined in the daily Laboratory Procedures. Record the reading on the "Back Wash Pond Test" form.

13. The permitted chlorine reading is an averaged value that must range from 0.07 to 0.15.

14. Place the turbidity sample in the turbidity meter and follow the steps to conduct a turbidity reading as outlined in the daily Laboratory Procedures. Record the reading on the "Back Wash Pond Test" form.

15. After an hour, read the Imhoff cone and record the reading on the "Back Wash Pond Test" form. The permitted Settleable Solids reading is an averaged value that must not exceed 0.2 ml/l.

16. Enter the information from the "Back Wash Pond Test" form into the monthly reporting form. The monthly reporting form is on the computer Desktop and labeled as "Backwash1.xls".

COLIFORM MONITORING PLAN

Monthly samples of total coliform of the raw and finished water quality MUST be taken and the results submitted on a regular basis to DOH. Samples of raw water total coliform must be taken at the WTP raw water sink, and delivered to the Lewis County Water Quality laboratory (LC Lab) by the end of day on any Monday.

1. Take a small plastic sample bottle as provided from LC Health.

2. Label the bottle as "R" for raw water.

3. Let the raw water tap at the Plant sink run for about 30 minutes.

4. Fill the sample bottle with the raw water. Do not overfill the bottle.

5. Complete the paperwork for LC Health.

Samples of the finished water total coliform are taken at a routine site every month, and can be dropped off any day the LC Lab is open. The routine sites are identified in the Coliform

Monitoring Plan, revised January 2013. The Coliform Monitoring Plan also outlines locations of the Repeat Sample sites and steps to take in the event an unsatisfactory sample occurs.

1. Take a sample bottle as provided from LC Health, and a chlorine cell bottle from the Plant chlorine test kit to Site #1.
2. Label all sample bottles from Site #1 as "1".
3. Locate the sample station/outside faucet. Generally, the samples will be taken outside, but if you have an opportunity to take the sample from an inside faucet, follow the same steps to disinfect the faucet.
4. Use the propane torch located in the truck tool box to heat exterior faucets. Do not torch any interior faucets with the propane torch!
5. Turn on the faucet and let it run for about 5 minutes at full force.
6. Decrease the flow to enable filling the sample bottle without overflowing. Cap the bottle.
7. Draw a sample using the sample cell in your chlorine test kit. Cap the bottle.
8. Turn off the faucet and secure Site #1. If using a sample station, follow the instructions to pump the station free of water to prevent ice in tubing. Follow the instructions outlined in the laminated card enclosed at every sampling station.
9. Take the sample bottles back to the truck and wipe the outside with a paper towel.
10. Conduct the chlorine analysis by following steps 18 through 20 in PART 5: LABORATORY PROCEDURES. Take the reading for Site #1.
11. Return to WTP and write down the readings as residual chlorine in the LC Health lab slip.
12. Discard samples from cells, rinse chlorine cells with finished water, and place on the drying rack/towel.
13. Complete the lab slip for all samples. Use the sample location name as identified in the Coliform Monitoring Plan.
14. Deliver samples to the LC Health lab.
15. Pick up the same number of new sample bottles that were dropped off.

Hours of the LC Water Quality laboratory facility are 8 AM to 5 PM Monday through Wednesday with lunch closure from 12:30 to 1:30 PM.

The Plant should keep enough sterilized bottles available for any unexpected sampling. Generally, we keep two month's supply of LC lab sterilized bottles and several disposable sterilized bottles from LC. When samples are dropped off, the Utility will pick up the same number of sterilized bottles. The Utility will track and rotate bottles so as to keep bottles no longer than six months. This process will continue until modified by the Administrator.

ANNUAL REPORTING AND MONITORING

DOH prepares an annual Water Quality Monitoring Report (WQMR) that outlines the monitoring activities required for that year and for other specific activities to meet operation requirements. This report is usually sent out in the first quarter of the calendar year. Upon receipt, the Engineer and Operator will review these requirements and schedule activities accordingly, have the Contract Laboratory on our service vendor list, and inform the Contract Laboratory of the upcoming monitoring activities so as to get the containers and instructions in a timely manner.

Local Laboratory: Lewis County Environmental Health Laboratory
360 NW North Street
Chehalis, WA 98532
360-740-1222

Contract Laboratory: ALS Environmental
1317 South 13th Avenue
Kelso, WA 98626
800-695-7222

TOTAL ORGANIC CONTAMINANTS

Sampling for total organic contaminants of the raw water is usually done as part of TTHM and HAA5 monitoring, or other monitoring as required by DOH. Samples are taken from the raw water tap at the WTP sink.

1. Let the raw water tap at the Plant sink run for about 30 minutes.
2. Fill the sample bottle with the raw water. Do not overfill the bottle as there are preservatives in the sample bottle.
3. Complete the Chain-of-Custody form and any accompanying paperwork. These forms will come from the Contract Laboratory. See Appendix G for a sample copy of a completed form.
4. Pack the sample in the cooler/ice chest from the contract laboratory. Place ice packs snugly around the bottle.
5. Deliver the cooler with paperwork to the Contract Laboratory.
6. Pick up a cooler/ice chest for the subsequent month's sampling. Store ice packs in the freezer until the next sampling event.

TTHM and HAA5

Total Trihalomethane (TTHM) and Halo-Acetic Acids (HAA5) are taken during the warmest months. These contaminants are by-products of drinking water disinfection, and reported in units of ppb. Refer to the most current Disinfection Byproducts (DBP) Monitoring Plan for the sampling schedule and location. The most current DBP Plan is "Stage 2 DBP Monitoring Plan-Surface Water" dated April 24, 2013.

1. Take the ice packs from the freezer. These are the ice packs that came with the cooler from the Contract Laboratory.
2. Take three sample bottles and cooler, and go to the designated sampling site.
3. Unlock the outdoor faucet.
4. Heat the faucet with the blow torch.
5. Turn the faucet and let the water run for about 5 minutes at full force.
6. Fill the HAA5 sample bottle with finished water. Do not overfill the bottle as there are preservatives in the sample bottle.
7. Cap the HAA5 sample bottle and place in the cooler.
8. Fill the TTHM sample bottle with finished water until it is almost full.
9. Fill the bottle cap with finished water. Pour water from the cap into the bottle until the bottle is about to overflow.
10. Fill the cap, quickly place the cap on the bottle, and tighten cap.
11. Turn the bottle upside down.
12. Look at the bottom to ensure there is no air pocket in the bottle.
13. If there is air in the bottle, then uncap and top off until there is no air in the bottle.
14. Repeat Steps #5 through #10 to fill the second TTHM bottle.
15. Complete the Chain-of-Custody form and any accompanying paperwork. See Appendix G for a sample copy of a completed form.
16. Pack the sample in the cooler/ice chest from the contract laboratory. Place ice packs snugly around the bottle.

DELIVERY TO CONTRACT LABORATORY

1. Deliver the cooler with paperwork to the Contract Laboratory.
2. If the subsequent sample date is within 3 months and it is convenient to do so, then pick up a cooler/ice chest for the subsequent sampling when the TOC samples are dropped off. At times, the contract laboratory may ship the cooler for the next HAA5 and TTHM sampling to us. Store ice packs in the Plant freezer until the next sampling event.

NITRATE

Nitrate sampling is done annually from the raw water tap at the Plant sink. Use a sample bottle from LC Health.

1. Let the raw water tap at the Plant sink run for about 30 minutes.
2. Fill the sample bottle with the raw water.
3. Complete the lab slip for LC Health.

4. Deliver the sample to LC Health Laboratory.

LEAD AND COPPER (Pb and Cu)

Refer to the most current version of the Pb and Cu Monitoring Plan. DOH will have this monitoring noted in their annual WQMR for the water system: these are usually done every three years and with our Contract Laboratory.

CONSUMER CONFIDENCE REPORT

The State Consumer Confidence Report (CCR) Certification Report must be submitted to DOH by July 1. One requirement of this report is to prepare and deliver copies of a Consumer Confidence Report for that year to ALL of our water system customers. As a cost saving measure, send the report out with the customer billings. The last customer billing will be the June billing.

The CCR must summarize the monitoring and results required in the WQMR of that year. For example if the WQMR instructed us to have TTHM, HAA5, Nitrates, and Cu and Pb testing for that year, then the CCR must show the results for those five types of analyses. Refer to prior issues of the CCR which are housed in the Vader Water System under the folder "Newsletter". Prior issues are also available on the Lewis County website under the water utility in Public Works.

WATER USE EFFICIENCY ANNUAL PERFORMANCE REPORT

A completed water use efficiency annual performance report must be submitted to DOH by the end of June. The period used for our reporting is from December of the preceding year to November of the reporting year. For example, the reporting year of 2012 is from December 2011 through November 2012. The reporting form is available from the DOH website.

This reporting requirement is to comply with the State Water Use Efficiency Act of 1989. For more information about this act and related guidelines, refer to the DOH website and the section in the current WSP.

To complete this form, you will need to track all drops of finished water leaving the Plant. You want to account for the finished water volume at the system-to-town meter at the Plant grounds with all volumes used by customers and the utility. You will need to track volumes used for maintenance flushing and repairs, lost from December 1 until leak repairs are made, approved hydrant uses by PW and approved contractors, firefighting and fire tankers, sold as noted on customer billings, and other accounted uses. These are accounted uses and further broken down into revenue generating and non-revenue generating water. Use the file "Water Use Notebook.xlxs" housed in the Vader Water System under the "Water Use" folder.

Ideally, we would like to account for every drop of finished water, but we don't have a closed, ideal system. What we want to do is to minimize distribution system leakage, and we have developed an Action Plan to control water loss. Preferably, the Action Plan should be updated and reviewed annually by the utility workgroup when the water use efficiency annual report is prepared. A copy of the Action Plan to reduce water loss is in the new county WSP.

CALLOUTS AND MAIN BREAKS

RESPONDING TO TELEPHONE CALLOUTS

The control system is programmed to call contacts in a sequential order. Usually the Operator will be the first responder and will cancel the callout. In the event the first responder is unable to do so, the system will call down the list. The sequence is as follows:

1. The next responder can cancel IF the callout is saying that "the problem has been corrected". If you do not hear this message, then we want to let the Operator know.

2. If you hear this message and wish to cancel the callout, then listen to the recorded message repeat three times, and wait for the message to ask if you wish to cancel the callout. Follow the instructions and punch in "555" to cancel.

3. Follow up with a phone call to the Operator about the message cancellation.

PIPE REPAIR PROCEDURE

1. Locate leak. Note locations of nearby valves and identify affected customers.

2. Call in to Area Road Supervisor and Engineering about location, site conditions, and plan. Coordinate with Engineering about public notification if the system has depressurized.

3. Get pipe repair supplies, equipment and personnel on site to start repair. Typical equipment includes: backhoe, trash pump, repair couplers, pipe segments, saw, shovels, rakes, wrenches, valve keys, traffic cones & signage, chlorine, clean 5-gallon bucket, and various hand tools to tighten fittings.

4. Once leak is located, assess the situation and identify affected customers. If this is a main break, then notify DOH. They will advise as to whether this is a boil water advisory situation. If it is, DOH will issue a public notice and the Utility will contact the two local radio stations, activate Lewis County Alert, post notices at the public sites, and deliver notices to all customers. Coordinate with Engineering about the text of the public notification. The public sites are at:

   - Cowlitz-Lewis County Fire District #20
   - City Hall
   - Little Crane restaurant
   - Post Office
   - J & G Grocery
   - Mt St Helens Grocery
   - Enchanted Valley Bulletin Board.

5. Isolate the leak area. As a rule, close and open valves slowly at all times to avoid abrupt pressure changes that could cause additional breaks. Close the lower-pressure-side-valve from the leak. Close the higher-pressure-side-valve to the point that you hear "screaming" and there is still pressure through the line (i.e., water is coming OUT of the line). "Screaming" is valve noise from the water rushing through the partially closed higher-pressure-side-valve.

6. Dig alongside the leak to make a sump hole. This hole must be deep enough to allow water to collect, yet NOT submerge the leak site. At the same time, the sump must be

dewatered by either a constructed channel (i.e., scoop with backhoe) or pumping (i.e., trash pump).

7. When the sump hole is constructed and a draining method is established, then clean the segment of pipe to be repaired. You want to have a clean pipe with a small amount of water leaking out.

8. Completely shut off the higher-pressure-side valve to fully isolate the leak.

9. Examine the leak. Determine the type of existing pipe and type of repair.

   If the existing main is a transite line (also known as asphalt cement (AC)) then don a mask and disposable gloves, and keep the pipe wet during the cutting. Use the masks designated for AC work by the Utility.

   Generally, if it is a simple "hole", then a repair clamp will be adequate. If it is a break or a large crack, then two couplers and a new length of replacement pipe will be needed. The replacement pipe type will generally be PVC 900 or approved industry standard for potable water.

   All fittings, pipe and parts must be disinfected with a solution of at least 200 mg/l of chlorine (one oz of chlorine to one gallon of water).

10. Install the disinfected components and tighten bolts. No grit or dirt particles are allowed on the pipe (new and existing), clamp, gaskets and fittings. The gasket must lay flat and overlap itself.

11. Slowly open the higher-pressure-side valve and check for leaks. No leakage is acceptable. If there is still leakage, then shut the valve, and fix the repair site with disinfected parts.

12. Once there is no leakage observed from the repair site, open the fire hydrant on the lower side of the repair. (We are assuming that there is a fire hydrant between the valves used to isolate the leak.) You want to flush any contaminants out so let it run for a few minutes. Then close the hydrant and slowly open the lower-pressure-side valve.

13. Place backfill over the repair site in 6" lifts, and compact with the backhoe bucket. Clean up the site and remove traffic control.

14. If Lewis County Alert, flyers, volunteers or other help were used to notify the affected customers then notify Engineering/Area 3 Road/other LC divisions that the repair is complete and water service is back online. The Administrator, Area 3 Road Supervisor, and Road Maintenance Manager are authorized to activate Lewis County Alert. If

needed and authorized, a Lewis County Alert message may be sent to customers that the repair is completed and any next steps.

15. Notify the Area 3 Road Supervisor that the repair is complete and note time of completion.

16. If DOH determines that the break is a boil water situation, then two satisfactory sets of coliform samples from five sites are needed before DOH will lift the boil water advisory. Take one set at five sites, and another set at the same sites 24 hours later.

    Some site selection guidelines are: use immediate upstream and downstream sites close to the break and within the isolated segment of main; use upstream and downstream sites outside of the isolated segment of main and about a block away; and a further downstream site near the end of the downstream flush point or closest dead end line. Take another set using the same sites at least 24 hours later. To save time, arrange to have the lab contact you as soon as possible about the results from the first sample set. If results from the first sample site indicate unsatisfactory results, then additional flushing and disinfection will be needed before drawing another set of samples.

    DOH also want to see chlorine concentrations at the same level or higher than the levels prior to the break so take chlorine readings of each sample.

    For instructions on drawing coliform samples, see "Coliform Monitoring Plan" under the "Reporting and Monitoring" section.

    Notify Utility Administrator, Utility Manager and Area 3 Road Supervisor about the results of all sets of coliform samples.

17. Utility Manager or Administrator will contact DOH about the completed sampling and repair.

18. Utility personnel authorized to activate Lewis County Alert will request a Lewis County Alert message be sent to customers that the system is off the boil water advisory order.

19. A pipe repair checklist is in Appendix J. This checklist (July 2008) was developed by AWWA for use in small system pipe repairs.

PROGRAMS

CROSS-CONNECTION CONTROL PROGRAM

The cross-connection control program is in Chapter 6 of the "City of Vader Comprehensive Water System Plan, May 2008". Although the WSP mentions three existing cross-connection assemblies, there is only one existing cross-connection assembly in the system: Vader wastewater treatment plant. Air gaps are designed in the filter-to-waste processes in the WTP, and the Little Crane restaurant changed practices to use a soda beverage dispenser isolated from their potable water lines.

The backflow prevention assembly at the WWTP is located outside the Laboratory Control and Chlorination building on the WWTP grounds. According to Lewis County regulations, the customer is responsible for annual testing of their backflow prevention assemblies: the City of Vader will test for the assembly at the WWTP.

A cross-connection assembly was installed near the water meter when Vader supplied water to the Enchanted Valley County Club (EVCC). This assembly was removed when the EVCC system became part of the Vader system in 2009.

Initial cross-connection hazard surveys are required for new and existing customers before connection to the water system.

SERVICE METERS

GOAL: Replace all water service meters to read in gallons by 2014.

The system has water service meters that read gallons in Vader and cf in Enchanted Valley County Club (EVCC). The service meters in Vader are a mix of Neptune, Badger, and Master Meter; and in EVCC is primarily Neptune. Generally, service meters should be replaced every ten years. The Utility started the meter replacement program in 2012 to replace all meters to read in gallons.

LEAK DETECTION

GOAL: Manage and operate the system efficiently; and reduce system leakage to below 20% at the time of the next Water System Plan revision (estimated to be in 2015).

1. Investigate sites of unusual wetness that is present year round; and to customer reports.
2. Educate customers about performing leak detection of their customer service lines.
3. Use leak detection services to monitor water mains.

4. Consider implementation of an automated metering system to reduce transcription errors and to identify high water usages.

5. Consider installing flow meters in different zones of the system to monitor usage and leaks.

When responding to customer calls of high water usage, the Utility shall provide guidelines to the customer about meter reading and leak repair of the customer line unless there is information given to make us believe that there may be a problem with the main or service line. If the information is available, Fiscal can provide a summary of past water usages in the last year for the customer. If the customer does not find indications of a problem on the customer line, they can request a Service Call. When a Work Order is issued, Utility staff will investigate. If the findings show a problem on the customer line, the customer will be notified. If the findings show a problem on the service line, the customer will be credited for the Service Call fee.

MAINTENANCE

WTP SYSTEM MAINTENANCE

GOAL: Operate and maintain the WTP system efficiently to provide quality potable water.

Follow the maintenance procedures and schedules for the plant as outlined in Appendix H.

Follow the maintenance procedures and schedules for the Trimite TR-100A water treatment facility as outlined in the O&M Manual, "City of Vader WTF, Vader, Washington, Project No. 200142" prepared by US Filter, Sturbridge, MA.

CLEARWELL MAINTENANCE

GOAL: Maintain the clearwell for increased longevity.

The clearwell is a concrete storage vault 29' long x 20'4" wide x 14' high with a capacity of 60,000 gallons. Baffle walls and perforated piping were constructed in 1993 to provide minimum contact time for the finished water.

Pressure transducers in the clearwell control the plant operation. These are set as shown.

- 11.5 ft turns on the intake booster pump.
- 13.0 ft turns off the intake booster pump.
- 14.0 ft is the high water alarm.
- 8.0 ft is the low water alarm.

Public Works retained Reliable Diving to conduct an inspection on July 17, 2013. We believe this was the first interior inspection of the clearwell since the multi-media filter system was constructed in the Plant in 2002. The clearwell and baffles are in good shape.

STORAGE RESERVOIR MAINTENANCE

GOAL: Maintain the reservoir for increased longevity.

The storage reservoir is a 55 ft diameter (15' high) bolted steel 250,000 gallon tank. To the County's knowledge, the tank was last painted and inspected when the reservoir was constructed in 1979. State DOH did an inspection in 2009.

Public Works did an informal inspection of the tank interior in May 2011. Clarity was good and little siltation was noted at the bottom. Reliable Diving inspected the reservoir on July 17, 2013. Recoating of the interior is advisable. Public Works is

INTAKE STRUCTURE MAINTENANCE

GOAL: Secure and keep the Intake facility and grounds neat and clean for a safe operating environment.

The intake pump is activated by floats in the intake clearwell. The clearwell levels at the Plant activate the booster pump by telephone, 360-295-3539.

1. Gate at SR 506 is secured, signed and vegetation at the approach is cleared for adequate sight distance.

2. Vegetation is cleared from the driveway (5' to 6' away from edge of gravel) and around the intake structure area.

3. Road surface of driveway is maintained (compacted, no potholes) for Utility vehicles.

4. Fencing is secured around the Intake building.

5. Intake building is secured and exterior of building is maintained (paint in good shape, ground is mowed, gravel is smoothed and firm, roof & siding is in good shape, door opens & shuts properly, etc.)

6. Interior of building is good (lights work, heater and fan works, no large water mess, cover on wetwell access, no bird or animal entry, keys in place, instruction/notification posters are intact, etc.)

7. Inspect intake pump and structure. Clear the intake using an air compressor.

8. Inspect and ensure the gate valve covers can be opened.

9. Inspect and ensure the gate valves are operable annually. This must be done when the system is offline.

WTP FACILITY & GROUNDS MAINTENANCE

GOAL: Keep the WTP facility and grounds neat and clean for a safe operating environment; and to instill public confidence in the potable water system.

1. Ensure gate and fences around the WTP facilities are secured (posts are upright, fencing is upright).

2. Clear vegetation from the approach and S. Military Road to maintain adequate sight distance.

3. Keep grass mowed.

4. Clear and keep bushes, blackberry vines and other shrubbery down.

5. Keep driveway, main entry and loading area clear.

6. Maintain exterior of buildings including roof and gutters. Gutters should be cleaned regularly. Downspouts should discharge away from the building. Doors should open and close smoothly. Roof should be clear of moss, and may be inspected by Facilities or Public Works. Protect and paint exterior surfaces.

7. Clear vegetation around the building to minimize moisture and vermin.

8. Avoid storing materials next to the buildings.

9. Ensure lights, signs, monitoring and other equipment are in working condition.

10. Monitor and clear the material from the backwash lagoons. Apply a bonding agent on the floor and sides of the lagoons on a regular schedule.

11. Inspect, install, clean, repair and replace needed safety items (i.e., signs, fire extinguishers, safety painted areas, mats, vents, heaters).

12. Inspect and install improvements to keep facilities (WTP, Intake bldg., storage shed) clean and dry.

13. Set out trash and recyclables on scheduled pickup days; and coordinate with Area 3 for heavy debris loads.

14. Keep, organize and maintain inventory of equipment, meters, parts, and laboratory inside the WTP building.

VEHICLE MAINTENANCE

GOAL: Keep vehicle operational and stocked to efficiently and adequately respond to callouts and site inspections.

1. Keep interior of utility vehicle clean and neat.

2. Ensure vehicle has proper forms and tools to respond efficiently to most callouts. To deter vandalism, tools should be stored inside the locked plant after hours.

3. Follow scheduled maintenance of the Follow scheduled maintenance of the vehicle (i.e., oil changes, tire pressure, brakes, regularly scheduled maintenance) with Motor Pool.

SERVICE CONNECTIONS MAINTENANCE

GOAL: Ensure water service connections that are the responsibility of the Utility are properly maintained.

1. Replace missing or damaged meter boxes and lids.

2. Note and forward to Engineering the location of any new and replaced line work, valves, hydrants, and connections.

3. Inspect, clean and improve the interior of meter boxes to enable ease and access for meter reading. Start a program for regular inspection.

4. Obtain easements or relocate boxes that are outside of the public right of way.

5. Inspect and exercise valves in the water system to ensure smooth operation and to identify replacement valves on an annual basis.

6. Flush, exercise and measure flow of hydrants on a semi-annual basis.

7. Clear vegetation and if needed, repair or install new location markers for meter boxes, valves and hydrants in the public right of way. Position markers in accordance with county or applicable city standards.

ADMINISTRATION

CUSTOMER ACCOUNT

Regular Fiscal Window Hours: 8:30 AM to 4:00 PM, Monday to Friday.
Normal Operation Hours: 8:00 AM to 2:00 PM, Monday to Friday.
Normal Operation Hours for Shut Off Days: 9:00 AM to 5:00 PM.
Fiscal Contacts: Kay, Brenda, Carma
PW Contacts: Lanette, Shirley

1. New Customer/New Account

- Customer comes into the Fiscal Office to complete the application and water use questionnaire. Customer will be required to provide the following information:
  Owners: Proof of ownership. Please give them the Owner's Letter.
  (Located: Y:Vader\Vader\Owner's List|Tim's Letter to Owners)
  Commercial: Proof of ownership or Lease Agreement
  Tenants: Rental Agreement
- Update Owner Spdhst: Y:\Vader\Owner List\Owner List for Vader.xlsx
- Account will be for the tenant identified on the lease. Government issued picture ID for all
- Customer pays deposit, turn on meter, and meter installation (if applicable) fees. Acceptable payment is by check, cash, credit/debit card or money order.
- Fiscal reviews the application to verify that all information is complete and correct.
- Fiscal enters information into the ASP and sets up a new account.
- Fiscal verifies the sewer account is open with the City of Vader.
- Fiscal completes a work order and emails this to PW the same day.
- PW will turn on water. Tentatively a 48 hour turnaround.
- PW will complete the information on the work order.
- PW will scan a copy and email back to Fiscal.
- Fiscal will keep the account information in a physical file folder.

2. Customer leaves as Owner – Foreclosure & Abandonment

- Customer (owner) notifies the Fiscal Office.
- Fiscal completes a work order and emails this to PW the same day.
- PW takes reading on the last day, removes meter, and follows work order instructions.
- PW emails the completed work order to Fiscal.
- Fiscal emails the final reading to the City of Vader.
- Fiscal bills customer, and, if applicable, refunds deposit within 30 days of receiving payment.
- Fiscal closes account. (Follow ASP process for closing account in system.)
- If there is a balance due, Fiscal will process a property lien to ensure that new owner will pay the past due balance. We cannot place a lien for more than four months' balance past due. (RCW 35.21.290) Property lien shall also include a meter installation fee to ensure a connection for the new owner.
- The lien process is located: Procedures\Processing a Property Lien for Vader Water Systems.docx
- Fiscal will contact the Hearing Examiner if the Customer appeals in writing to the Fiscal Office.
- Fiscal will establish a new account for the new Owner/Bank using Scenario #1.

- If realtor needs temporary water access, Fiscal will charge a turn on fee and send work order to PW.
  - If water service is needed more than three business days, then they will be considered a new customer. Fiscal will follow the guidelines for Scenario #1.
- Fiscal will Update Spreadsheet: Y:\Vader\Vader Accounts Base Rate Foreclosure.xlsx

3. Customer leaves as Owner – Sale of Property

- Customer (owner) notifies the Fiscal Office.
- Fiscal gives Customer the following options:
  - No change by Customer and Customer pays base rate of $87. (Water meter can be locked or unlocked Customer's request).
  - Close Customer's account, remove meter, and bill the New Owner the $300 reinstallation fee. (This ensures a water connection) No additional turn on fee is charged.
  - Short term rate for up to one year with the meter locked. Customer will pay 67% of the base rate charges monthly ($29.15) and the turn on fee.
  - Close Customer's account and remove the meter. Customer is not charged anything. This option does not guarantee a connection. PW will record a Notice of No Connection that will be attached to the property title.
- Fiscal completes a work order and emails this to PW the same day.
- PW takes reading on the last day and follows work order instructions.
- PW emails the completed work order to Fiscal.
- Fiscal emails the final reading to the City of Vader.
- Fiscal bills customer, and, if applicable, refunds deposit within 30 days of receiving payment.
- Fiscal closes account. (follow ASP process for closing acct in system)
- If realtor needs temporary water access, Fiscal will charge a turn on fee and send a work order to PW.
  - If the realtor needs more than three business days, then they will be considered a new customer and follow the guidelines for Scenario #1.

4. Customer leaves as Renter

- Customer (renter) notifies the Fiscal Office.
- Fiscal completes a work order and emails this to PW the same day.
- PW takes reading on the last day, locks meter, and follows work order instructions.
- PW emails the completed work order to Fiscal.
- Fiscal bills Customer, and, if applicable, refunds deposit within 30 days of receiving payment.
- Fiscal closes account. (Follow ASP process for closing acct in system)
- Fiscal emails the final reading to the City of Vader.
- Fiscal contacts Owner to inform renter is gone and begins billing Owner for base charges.
  - Note: Owner can choose any of the options outlined in Scenario #3.

5. Customer leaves as Renter with an unpaid balance

- Fiscal completes a work order & emails to PW the same day.
- PW takes reading, locks the meter, and follows work order instructions.
- PW emails the completed work order to Fiscal Office.
- Fiscal bills Owner and Customer (renter).
- Fiscal provides notice with Owner's bill that the account is in Owner's name and they are liable for any incurred charges according to Section 13.80.100 & 13.80.500 LCC.

- http://www.codepublishing.com/wa/lewiscounty/
- Fiscal proceeds with collections process if Owner does not pay.

6. Customer leaves and applies for new water service within service area

- Fiscal gets payment status and water service account information at the last service address.
- If water service at the last service address was paid by the Owner or Customer, prior account is in good standing, and there is low risk to the Utility by providing new service, then Fiscal proceeds to set up account using guidelines in Scenario #1.
- If water service at the last service address was paid by the Customer, prior account charges are past due, and there is a high risk to the Utility by providing service, then: Service is denied until fees and charges for last service address are paid, or service may be provided if the new account is established under the Owner's (landlord) name.

7. Customer will be away up to 12 months

- Customer notifies the Fiscal Office.
- Fiscal gives Customer the following options:
  - No change by Customer and Customer pays base rate of $87. (Water meter can be locked or unlocked per Customer's request).
  - Close Customer's account, remove meter and bill Customer the $300 reinstallation fee upon their return. (This ensures a water connection) No additional turn on fee needed.
  - Short term rate for up to one year with the meter locked. Customer will pay 67% of the base rate charges monthly ($29.15) and the turn on fee.
  - Close Customer's account and remove the meter. Customer is not charged anything. This option does not guarantee a connection. PW will record a Notice of No Connection that will be attached to the property title.
- Fiscal completes a work order and emails this to PW on the same day.
- PW takes reading on the last day, and follows work order instructions.
- PW emails the completed work order to Fiscal.
- Fiscal bills customer and follows procedures for the option requested by the Customer.

8. Customer wants service after normal working hours

- Fiscal informs customer of:
  - Normal working hours (See Summary box on first sheet of this section).
  - Response time may take up to 48 hours or two business days to turn water service back on after payment and request is made by the customer.
  - Option for service outside of normal working hours and the applicable fees (service and overhead) and costs. (Refer to latest Schedule of Fees and 13.80.430 and 13.80.480 LCC.)
- Fiscal immediately notifies PW via telephone and issues a work order to follow.
- PW follows work order instructions.
- PW emails the completed work order to Fiscal.
- Fiscal bills customer immediately.

9. Customer tampers with lock or meter, and other unauthorized actions.

- PW locks meter immediately.
- PW sends a certified letter with a warning to the Owner and Customer at the service address that their action is a violation of Section 13.80.100(17) LCC and RCW 9A.61.020. The letter shall outline remedial steps and timeline to be taken by the violator.

- If remediation is not undertaken by the violator PW will remove the meter, notify Fiscal to close the account (if applicable) and proceed with county procedures to levy penalties and charges on the property according to Section 13.80.120 LCC.

10. Customer moves out, but house is occupied by others.

- Fiscal completes a work order and emails this to PW on the same day.
- PW takes a reading, notifies occupant(s) with a door hanger to establish a new account, and follows work order instructions.
- PW emails the completed work order to Fiscal.
- If new account is not set up in 3 business days, Fiscal will issue a work order to remove the meter, and email this to PW. PW takes a reading, removes meter and follows work order instructions.
- PW emails the completed work order to Fiscal.

11. Leaks.

- Please see the Standard Operating Procedures for Leaks: Y:\Vader\Procedures\Guidelines for handling leak calls 040412.docx

12. Purchase of property that has a property lien from Lewis County

- If the property is being purchased through an agent and a title company is involved, Fiscal will ask LC Civil Prosecuting Attorney Office to view their Escrow Instructions to ensure that Lewis County is a signatory. Once approved, Lewis County Fiscal can fill out a *Notice of Satisfaction of Lien* for the Escrow Company, prior to payment.
- If an individual would like to pay the property lien in person, they must submit the full payment of the property lien to the Fiscal Office. Fiscal will prepare the Notice of Satisfaction of Lien and have it notarized. Fiscal will give the paid purchaser the document and they will process it through the Treasurer's Office and the purchaser will pay the recording fees.
- If a bank would like temporary water on to show or clean the home, they do NOT have to pay off the lien, they follow the instructions in Scenario#2.

13. Deceased clients

- If we receive notice from the family or estate, Fiscal will update the account.

If we receive notice from an obituary or notice of Estate Sale, Fiscal will put that information into the "Deceased Clients" Folder. No changes to the account will be initiated until the water bill becomes delinquent or if we are notified by the family or estate. Fiscal will also update their Vader account spreadsheet, spreadsheet.

WATER USAGE FROM FIRE PROTECTION FACILITIES

Use of water from a fire protection facility must be approved by the Utility and in accordance with WAC 246-290-490. Approval of use by the Administrator shall have the following conditions:

- Location(s) of hydrants and withdrawal points
- Means of determining usage volumes
- Duration of usage period
- Type of approved double check valve assembly, air gap or assembly to avoid cross contamination
- Maximum volume of water withdrawal
- Hours of withdrawal operation
- Attendance by Utility personnel.

1. The Fiscal Billing Office (Fiscal):
   - Processes application as new Commercial Account. The Customer will be required to provide information about type and method of water withdrawal methods so as to protect public water system from contamination.
   - Forwards application packet to Public Works for approval.

2. Public Works:
   - Reviews application to ensure conditions listed above are met.
   - Approves location of fire hydrant to be used for filling. (Hydrant should be located at the end of the water main such as the hydrant at 6th St/RR tracks.)
   - Scans file for Public Works records.
   - Forwards application packet back to Fiscal.
   - Utility Operations staff notes usage volume to Engineering and Fiscal.

3. Fiscal:
   - Processes approved application with commercial account deposit.
   - Charges fees as established in Title 13 LCC and the current fee schedule for the Utility. Applies base rate throughout usage period.
   - Enters usage volumes into VWS database when reported by Public Works.
   - If withdrawal is done after normal working hours, then apply Service Call Charge, staff's labor and vehicle charges, and overhead rate for staff labor and vehicle charges.
   - Invoices customer monthly or when term of use is complete.
   - Closes account and processes deposit according to Fiscal procedures.

WAIVER OF FEES

Waiver of Fees may be granted for the following reasons:

1. "Forgive" late fee due to an unforeseen circumstance which has delayed payment.
2. Adjustment for leaks repaired by the Utility or customer in good standing.
3. Incidental cases as approved by the Administrator.

Conditions of fee waivers and bill adjustments are:

1. Granted to customers in good standing with at least one year of water service.
2. Usually granted to customers once per 12 month period.
3. Made at the Administrator's discretion.

1. The Fiscal Billing Office (Fiscal):

- Receives request for help from customer and forwards application to customer for completion. When completed application is returned to Fiscal, verifies information on application and attaches account history of prior year.
- Determines if request is straightforward and if so, approves and enters findings into their records as an "Administrative" action.
- If request involves further issues, forwards to Administrator at PW with attaches account history.

2. The Administrator at PW:

- Reviews application packet and determines if request is justified.
- Signs and dates application for Utility and notes amount of waiver and effective date if approved.
- Scans (copies) file for Public Works records.
- Forwards original application and documentation back to Fiscal Billing Office.

3. Fiscal:

- Enters findings into their records.
- If approved, adjusts the bill.
- Notifies customer and places in customer file.

HIGH WATER USAGE COMPLAINTS

The Guidelines below pertain to complaints generated by customers as a result of high usage reported on their water bills.
Calls reporting visible leaks at meters, fire hydrants, valves, etc. shall be immediately referred to Public Works. See Emergency Contact notify list on "Who does what?"
Section 13.80.430 states that the minimum charge (which includes travel time) for service calls shall be applied. Section 13.80.440 states that customer pays for all charges.

1. Fiscal:
   - Receives customer complaint about high usage or possible leak.
   - Reviews account with customer to determine if usage is high as compared to 3 year historical data.
   - Refers concern to Public Works (with customer's phone number and mailing address) by email if customer is not satisfied and still feels there may be a "leak" or problem with the meter. Fiscal attaches 3 year historical usage data to the email. Email to Lanette. CC: Shirley, Carma and Kay.
   - If Customer is requesting waiver of charges, they will need to fill out (or completes while on the telephone, Accounting Department can sign per customer) the Consideration for Waiver of Fees or Charges Form.

2. Public Works:
   - Reviews historical usage and meter service history.
   - Generates work order for WTPO if needed.

3. Operations/WTPO:
   - Inspects meter and reports findings back to Public Works and Fiscal.
   - Discusses findings with customer, if available.
   - Repairs or replaces meter, if warranted.
   - Completes work order with meter readings and summary of follow-up actions.
   - Forwards completed work order to PW.

4. Public Works:
   - Calls Customer with findings.
   - Sends letter to customer advising them of the findings, including the 3 year historical usage graph and plan of action the county will take, if any. Letter will include advice to call plumber if necessary and reminder that the county does not perform plumbing or construction work to fix leaks; and additional visits to troubleshoot the meter may entail a $25 or $75 (after hours) service call plus labor costs for employee.
   - If Customer generates additional service call/work order, inform Fiscal. Fiscal will invoice customer for applicable charges generated by this work order.
   - Scans correspondence and cc's Fiscal.
   - Logs work order into the "Work Orders" and "Problems" spreadsheets. (*The latter worksheet is used to identify potential water main problems based on recurring complaints.)*

LOW-INCOME SENIOR and TOTALLY DISABLED RATE APPLICATIONS

Lewis County Code Section 13.80.460 Charges for Low-Income Senior Citizen Customers:

(1) The fixed rates for low-income senior citizen residential customers and low-income totally disabled residential customers shall be one-half (50 percent) of the residential base charge that would otherwise apply. All consumption shall be as for residential customers as set forth in this chapter.

(2) All low-income senior citizen residential customers and low-income totally disabled residential customers applying for low-income senior citizen customer or totally disabled residential customer rates herein provided shall furnish a claim for exemption in such affidavit form as shall be prescribed by the Administrator. Such form shall be furnished on or before January 31 of each year, within 30 days from the date of account opening, or unexpected sudden change of income status. The Utility may request that all or some requests be renewed annually by the Customer.

1. The Fiscal Billing Office (Fiscal):
   - Helps applicant complete customer part of application.
   - Verifies documentation requested on the application, attaches copies as applicable, and signs ID and Income verification section.
   - Forwards application to the Administrator (Public Works) for consideration.

2. Public Works:
   - Reviews application packet, and determines if the applicant meets the criteria:

Lewis County Code Section 13.10:

Low income senior citizen customer shall mean a person who is 62 years of age or older and whose total income, including that of his or her spouse or co-tenant, does not exceed the one-person, low income figure for Community Development Block Grant (CDBG) projects.

Totally disabled customer shall mean any person who has been classified as totally disabled by the Social Security Administration and whose total income does not exceed the amount provided for low-income senior citizen customers.

   - Signs and dates application for Utility and notes "effective" and sunset dates.
   - Scans (copies) file for Public Works records, with social security info redacted.
   - Forwards original application and documentation back to Fiscal.
   - Sends letter to applicant advising of approval, effective and sunset dates.
   - Monitors approved applications for renewal prior to expiration date.

3. Fiscal:
   - Enters findings into their records.
   - If approved, adjusts the bills.
   - Notifies customer of expiring exemption.

COLLECTIONS

Ordinance 1221, Section 13.80.300, LCC-Customer Deposit, Section 13.80.400, LCC-Customer Charges and Section 13.80.500 Method of Billing and Payment.

Also see Client Service Agreement between Fairway Collections and Lewis County effective 2-9-12. Procedures as outlined in the Feb 9, 2012 meeting with Greg Luhn are included below. Verified document with Greg Luhn on May 21, 2012.

1. If payment by water customer is not received in full within 3 business days from the date of the door hanger, Fiscal will send a Shut Off List to Public Works. Public Works will then lock meters and complete a meter reading. These accounts are still considered "active." Fiscal will notify every owner of the delinquent customer tenant and send a copy of the notification letters to Public Works.

2. Fiscal sends a shut off list of property owners to Fairway Collections through their online website. *These accounts are currently known as Fiscal's "shut off" list – they are already approximately 3 weeks past due.* Fairway provides detailed acknowledgement of the accounts to Fiscal within three working days.

    a. Fiscal sends notice, by email, to Public Works when account(s) are being turned over to collections.

3. Fairway immediately sends "pre-collection" letter advising the customer of 30 days to remit the debt to Lewis County. Fiscal receives a copy of that letter from Fairway for their files. If debt is disputed, Fairway and Fiscal review the account documentation. Fiscal keeps an updated list of the past due accounts and when 30 day window for payment is due. When a payment is made, Fiscal will notify Fairway and Public Works.

    a. If account is not paid by the 31st day after the account is turned over to Fairway, *Fairway notifies Fiscal to review the list to determine that all accounts are still delinquent.*
    b. Fairway adds 40% to the debt to cover their fees and starts the collection process.
    c. Fiscal will continue to bill base rate charges.
    d. If no payment after 75 days from the time Fiscal turns the account over to collections, the debt goes to credit reporting. Fairway will notify Fiscal when this is done.
    e. Fiscal/PW will consider the option of a property lien at this time. This will be done outside of the collection process.

4. On the 31st day, Fiscal sends work order to Public Works to remove service meter for non-payment of debt. The account is now considered "closed".

    a. Public Works emails work order "door hanger notice" to the Water Utility Operator and Area 3-VWS Supervisor. Water Utility Operator attaches the 'WATER METER REMOVAL" door hanger to the residence at least three business days prior to the removal.

    b. Water Utility Operator notes meter removals and readings on work order form and forwards a copy to Fiscal.

c. If there is any usage or base rate charges from the date of the last bill (when the shut off notice was completed), Fiscal will invoice the customer for this amount, less any deposit, and email Greg Luhn at the Collection Company.

d. If owner wishes to have meter replaced and has paid all outstanding charges, we will use the same account number to keep the customer history, but new account charges will apply. These charges include a new deposit, re-installation fees and the meter turn on fee.

PROPERTY LIEN (While in receivership)

> Following the guidelines for liens in RCW 35.21.217,
> (http://www.mrsc.org/subjects/pubworks/utilbill/collect.aspx#utility)

1. Fiscal will process the **bimonthly billing** in ASP to complete the first step of getting a customer ready to do a property lien:

   - Clearly identify billing and due dates on the utility bill.
   - Note on the utility bill or in a customer letter that charges remaining unpaid after a specified number of days of the billing or due date (30 days is the average used by cities) will be considered delinquent and subject to interest and penalties.

2. When payment is not met, Fiscal will process the **Delinquent Statements**:

   - Provide notice that if delinquent charges are not paid within a specified number of days from the due date (10 days is the average), water service will be discontinued and shut off at the meter (also identify pertinent municipal code or ordinance provisions).
   - Mail notice of delinquency as soon as an account becomes delinquent.

4. If payment is still not made by the 22nd of the month following the billing, a **door hanger** will be issued. If the property owner has not responded within 3 business days, Fiscal will send a Work Order to Public Works and the **water will be shut off**. Fiscal will bill the owner's account for the door hanger charge.

4. Fiscal will then mail a CERTIFIED letter to the property owner that will include the following:

   - Include in the notice a statement of the utility's procedures regarding termination of service, including notice of hearing rights, deferred or budget payment availability, penalties, interest, and any additional charges for reestablishing service.
   - Notify delinquent customers that termination of service does not relieve them of the obligation to pay all outstanding bills and charges;
   - Customers should also be notified that before service can be resumed, all outstanding bills and charges, including a water turn on charge, must be brought current and that an additional deposit may be required.

5. Fiscal will search on the Auditor's Online Records to see status of the property. https://quickdocs.lewiscountywa.gov/recorder/web. Click "I acknowledge" which sends you to "Document Search" page. Search by property owner's last name. Enter the name under "Grantee". Click on search. Click on Grantee's name and view attachment on the left side under "Document Images." (You may have to try under Grantor, as well).

   - If these conditions apply, you CANNOT process a property lien and will have to use our Collections process:
     i. If the property is in foreclosure or default.
     ii. If the property owner has done a Quit Claim Deed to another person.

Searching for property transfers, liens, foreclosures on Auditor's Online Records…

1. On the Lewis County website, click on Auditor's Online Records: https://quickdocs.lewiscountywa.gov/recorder/web/
2. Click "I acknowledge" which sends you to "Document Search" page.
3. Specify the search parameters in "Recording dates", and then click on "Advanced" criteria.
4. Fill in Section, Township and Range – this will help you find that information: http://maps.lewiscountywa.gov/maps/AsrParcMaps.html

All documents recorded during that time period will be shown; parcel number will be noted on the document. If you need to research more than one parcel, just hit "back" and change it.

For Vader Water Utility's service area, search Sections 28, 29, 32 & 33, Township 11, Range 2W.

Searching for Utility Notification Center Locates

1. Log onto this website: http://www.managetickets.com/
2. Click on the "Search and Status" box in the middle of the page.
3. Click on WA in the "Select a State" dropdown box.
4. On the next data page, enter the date search parameters at the top.
5. Skip down to the "Location Information" section and click on Lewis County, enter the city – Vader, and other specific detail as needed such as street and location.
6. Click on the "Search" tab at the lower left bottom of the page.

For other locate selections and information, the main website is:
http://www.callbeforeyoudig.org/

Revised 7-1-16